South Carolina
DHEC
Department of Health and Environmental Control
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TO Project File
Koppers Company Inc
SCD 003 353 026
Florence County

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DATE: September 18, 1996

RE Evaluation of Koppers Company status under the RCRIS Corrective Action Environmental Indicator Event Codes (CA725 and CA750)
EPA I D Number SCD 003 353 026

I. PURPOSE OF MEMO

This memo is written to formalize an evaluation of Koppers' status in relation to the following RCRIS corrective action codes:

1) Human Exposures Controlled Determination (CA725),
2) Groundwater Releases Controlled Determination (CA750)

The applicability of these event codes adheres to the definitions and guidance provided by the Office of Solid Waste (OSW) in the July 29, 1994, memorandum to the Regional Waste Management Division Directors.

II. HUMAN EXPOSURES CONTROLLED DETERMINATION (CA725)

There are three (3) national status codes under CA725 These status codes are

1) YE Yes, applicable as of this date
2) NA Previous determination no longer applicable as of this date
3) NC No control measures necessary

Region 4 has also added a regional status code to CA725 which tracks initial evaluations in which a determination is made that plausible human exposures to current contamination risks are not controlled This regional status code is listed as "NO, not applicable as of this date." Use of the regional status code is only applicable during the first CA725 evaluation Evaluations subsequent to the first evaluation will use the national status codes (i e , YE, NA and NC) to explain the current status of exposure controls.

Note that the three national status codes for CA725 are based on the entire facility (i e , the codes are not SWMU specific) Therefore, every area at the facility must meet the definition before a YE, NA or NC status code can be entered for CA725 Similarly, the regional status code, NO, is applicable if plausible human exposures are not controlled in any areas of the facility

This particular CA725 evaluation is the first evaluation performed for Koppers Because assumptions have to be made as to whether or not human exposures to current media contamination are plausible and, if plausible, whether or not controls are in place to address these plausible exposures, this memo first examines each environmental media (i e , soil, groundwater, surface water, air) at the entire facility including any offsite contamination emanating from the facility rather than from individual areas or releases. After this independent media by media examination is presented, a final recommendation is offered as to the proper CA725 status code for Koppers

The following discussions, interpretations and conclusions on contamination and exposures at the facility are based on the following reference documents·

1) December 1992 Post-Closure Permit Renewal Application (revised June 1994)
2) RCRA RFI Report, dated December 1990 (revised March 1993)

III. MEDIA BY MEDIA DISCUSSION OF CONTAMINATION AND THE STATUS OF PLAUSIBLE HUMAN EXPOSURES

Groundwater - Releases from SWMUs and/or AOCs have contaminated groundwater at concentrations above relevant action levels. The highest concentrations of groundwater contamination are found in the southwest portion of the facility near SWMUs 6 and 8 The upper two aquifer zones, "A" (10-20 feet bls) and "B" (45-50 feet bls) zones, generally have greater concentrations of contaminants than the lower "C"

(95-100 feet bls) zone aquifer. The main constituents of concern include pentachlorophenol, and polynuclear aromatic hydrocarbons At offsite groundwater monitoring wells, contamination is comparatively lower than that found onsite Two supply wells for the city of Florence, SC are located within one mile of the facility These wells obtain the majority of their water from the Middendorf aquifer The wells are screened approximately 320 to 450 feet below the ground surface

In February 1988, EPA issued a 3008(h) Order (U S EPA Docket Number 88-03-R) for the Koppers facility to prevent groundwater contamination from migrating further offsite. A series of fourteen (14) groundwater extraction wells were installed along the southern property boundary and have been in operation since 1986 The final remedy for groundwater remediation has not been determined. In 1983, a groundwater investigation indicated groundwater contamination in an adjacent residential area As a result of that investigation, Koppers funded the construction of a public water main extension and household hookups to the City of Florence water supply for the residents. A combination of the water supply hookup and the boundary extraction well network have resulted in the control of human exposures to groundwater contamination at this facility

Surface water - Surface water and sediment samples collected from Pye Branch and its unnamed tributary and Two Mile Creek during the RCRA Facility Investigation contained site associated constituents including acid extractable phenols and PAHs Crayfish tails collected from Pye Branch contained low concentrations of site associated constituents including PAHs and acid extractable phenols Exposure to humans from surface water contaminated with site associated constituents is undetermined at this time The RFI Report proposes additional investigation of the facility

Soil - Soil at the facility is contaminated with pentachlorophenol, and polynuclear aromatic hydrocarbons above relevant action levels. Mercury, arsenic and chromium have also been detected. The highest concentrations of organic constituents were detected in subsurface soils at SWMUs 6, 8, 25 and 33. SWMUs 8 and 5 detected high concentrations of metals Effects on human health from exposure to contaminated soil is undetermined at this time. However, the contaminated soils are onsite and facility access is restricted by means of a fence and gates.

Air - Site associated constituents were detected in ambient air samples collected during the RFI. Both upwind and downwind sample locations contained these constituents with higher concentrations detected at upwind locations during several samplings SWMU related emissions and process related emissions were difficult to segregate.

IV. STATUS CODE RECOMMENDATION FOR CA725:

The facility has implemented interim action with regard to groundwater contamination and does have facility access restricted with fencing and gates However, exposure by means of surface water

contamination and airborn contamination has not been determined Because not all media are known to be controlled, it is recommended that CA725 NO be entered into RCRIS

V. GROUNDWATER RELEASES CONTROLLED DETERMINATION (CA750)

There are three (3) status codes listed under CA725.

1) YE Yes, applicable as of this date
2) NA Previous determination no longer applicable as of this date
3) NR No releases to groundwater

Region 4 has also added an additional status code which tracks the initial evaluations in which a determination is made that groundwater releases are not controlled This regional status code is listed as "NO, not applicable as of this date " Use of the regional status code is only applicable in the first CA750 evaluation. Evaluations subsequent to the first evaluation will use the national status codes (i e., YE, NA and NR) to explain the current status of groundwater control

Note that the three national status codes for CA750 are designed to measure the adequacy of actively or passively controlling the physical movement of groundwater contaminated with hazardous constituents above relevant action levels The point where the success or failure of controlling the migration of hazardous constituents is measured is termed the designated boundary (e g., the facility boundary, a line upgradient of receptors, the leading edge of the plume as defined by levels above action levels or cleanup standards, etc) Therefore, every contaminated area at the facility must meet the definition before these event/status codes can be entered Similarly, the regional status code is applicable if contaminated groundwater is not controlled in any area(s) of the facility

This evaluation for CA750 is the first formal evaluation performed for Koppers. Please note that CA750 is based on the adequate control of all contaminated groundwater at the facility The following discussions, interpretations and conclusions on contaminated groundwater at the facility are based on the following reference documents:

1) 1996 Semi-Annual Groundwater Monitoring Report
2) December 1992 Post-Closure Permit Renewal Application (revised June 1994)
3) RCRA RFI Report, dated December 1990 (revised March 1993)

VI. STATUS CODE RECOMMENDATION FOR CA750:

The groundwater is contaminated at concentrations above relevant action levels by releases from SWMUs and/or AOCs. Releases from SWMUs and/or AOCs have contaminated groundwater at concentrations above relevant action levels The highest concentrations of groundwater contamination are found in the southwest portion of the facility near SWMUs 6 and 8. The upper two aquifer zones, "A" (10-20 feet bls) and "B" (45-50 feet bls) zones, generally have greater concentrations of contaminants than the lower "C"

(95-100 feet bls) zone aquifer The main constituents of concern include pentachlorophenol and polynuclear aromatic hydrocarbons Offsite groundwater monitoring wells have detected comparatively lower levels of contamination Two supply wells for the city of Florence, SC are located within one mile of the facility These wells obtain the majority of their water from the Middendorf aquifer The wells are screened approximately 320 to 450 feet below the ground surface

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cc Joan Hartley, Permitting
Syed Ahmed, EPA Region IV